PRODUCT DATA SHEET

Rhino AP-ETH

IoT gateway. Reads data from metering devices and sensors. Equipped with multiple communication interfaces supporting most popular protocols. Includes two RF channels for wireless communication with Rhino hardware. Data transfer to the Rhino Cloud Platform via Ethernet.Powered by external 5-24VDC power supply.

DEVICE OVERVIEW

1. Power socket
2. Ethernet socket
3. SMA ISM 1 antenna connector
4. SMA ISM 2 antenna connector
5. Configuration status LED
6. Internet connection status LED
7. RS232N connection
8. RS232 and RS485 connections
9. 10 Radio communication LEDs
11. Power status LED

TECHNICAL PARAMETERS

Communication type	Ethernet (DHCP / Static IP)
Rhino communication	Frequency range: 433MHz ISM channel 1 - Rhino ED DI / ED DI-D / Sensors ISM channel 2 - Rhino ED RS485 / RS232 Maximum of 50 end devices on each radio channel
Input voltage	5-24VDC (> 10W)
Internal battery	2700 mAh (emergency power supply)
Internal memory	uSD card (min. 8 GB)
Interface protocols	**RS232** - DLMS, IEC62065 **RS485** - DLMS, IEC62065, Modbus RTU, GazModem I, GazModem II **Ethernet** - DLMS, IEC62025, BACnet, Modbus TCP/IP, Custom network protocols **Optional interfaces** - M-Bus, Wireless M-Bus OMS

Got questions?
Contact us!

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Configuration	Over the Air (OTA)
Firmware update	Over the Air (OTA)
Operating temperature	0˚C - 85˚C (depending upon installed environment)
IP Class	IP40 (not suitable for outdoor use)
Dimensions	87.5 mm x 90.0 mm x 65.0 mm (5 DIN modules)
Weight	~0.2kg
Additional equipment	1 x ISM antenna with 3m cable and magnetic base

POWER SPECIFICATION

Required power supply: 5V-24V/DC output voltage with minimal 10W. The built-in 3.7V 2.9Ah lithium-ion battery, Allows it to continue working for several hours in case the external power supply fails.

LED INDICATION

Power mode	**Red Permanent** - Power OK **Flashing** - Battery power
RF1 / RF2	**Short Flash** - Data received
NET	**Green Permanent** Good internet connection
CONFIG	**Green Permanent** Configuration is correctly loaded to the device.

RS485

Multiple meters or devices can be connected on a shared main. The interface is galvanically isolated.

Transmission speed	300 to 115200 bit/s
Transmission parameters	Customizable
Voltage range	-7V - +12VDC
Max number of devices connected	256 / 1/8 UL (unit load)

RS232

The RS232 port can connect one device or by using one optical head. This interface is galvanically isolated.

Transmission speed	300 to 115200 bit/s
Transmission parameters	Customizable
Voltage range	-25V - +25VDC
Max number of devices connected	1

REQUIRED CABLE TYPES

Signals thickness	0.129-1.31 MM² - 26-16AWG
Power supply thickens	0.205-3.31 MM² - 24-12AWG

INSTALLATION

Installation should be performed by a qualified electrician, automation specialist or an installer having the required level of specialism. For safety reasons, a DIN-rail enclosure must cover the terminals.

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DEVICE CONFIGURATION

Use the mobile cloud application to configure read parameters and control the Rhino AP device remotely. To configure Ethernet settings and service meter readings, connect an Ethernet cable to a computer and open the web browser and go to IP address 192.168.0.160:8080 to login using the credentials below:

Username: rhino
Password: Rh!n0@mi

After the first login, change the password and save the new password securely.

ARCHITECTURE

Rhino AP can be expanded with external devices (interfaces), Allowing reading of meters located in places without access to power or network.

wM-Bus wireless module connected to the RS232 port, for wireless M-Bus OMS meters and sensors

Rhino ED DI wireless battery device for pulse output S0) meters

Rhino ED RS232, RS485 wireless device for meters with serial communication interfaces

Rhino Sensors wireless device featuring temperature, humidity, PM2.5 and PMTO concentrations, as well as air quality (VOCt and CO_2).

Rhino ED DI-D wireless battery device with screen for gas, water, heating and kWh meters with pulse output (S0).

TROUBLESHOOTING

- If none of the LEDs are illuminated, ensure the power supply is connected properly.
- If the LED for internet connection (6) is OFF, check the settings and operation of the LAN / WAN network.
- If the configuration status LED (5) is OFF, the device has not downloaded the configuration from the Rhino server. Check whether the device is configured in the mobile cloud application.

FACTORY RESET

Rhino AP can be restored to factory default settings by removing the top cover and pressing and holding the button on the left side for 20 seconds. After restoring to factory default settings, Ethernet will change to DHCP and registration data will return to factory default settings. A short button press will turn the device off and on.

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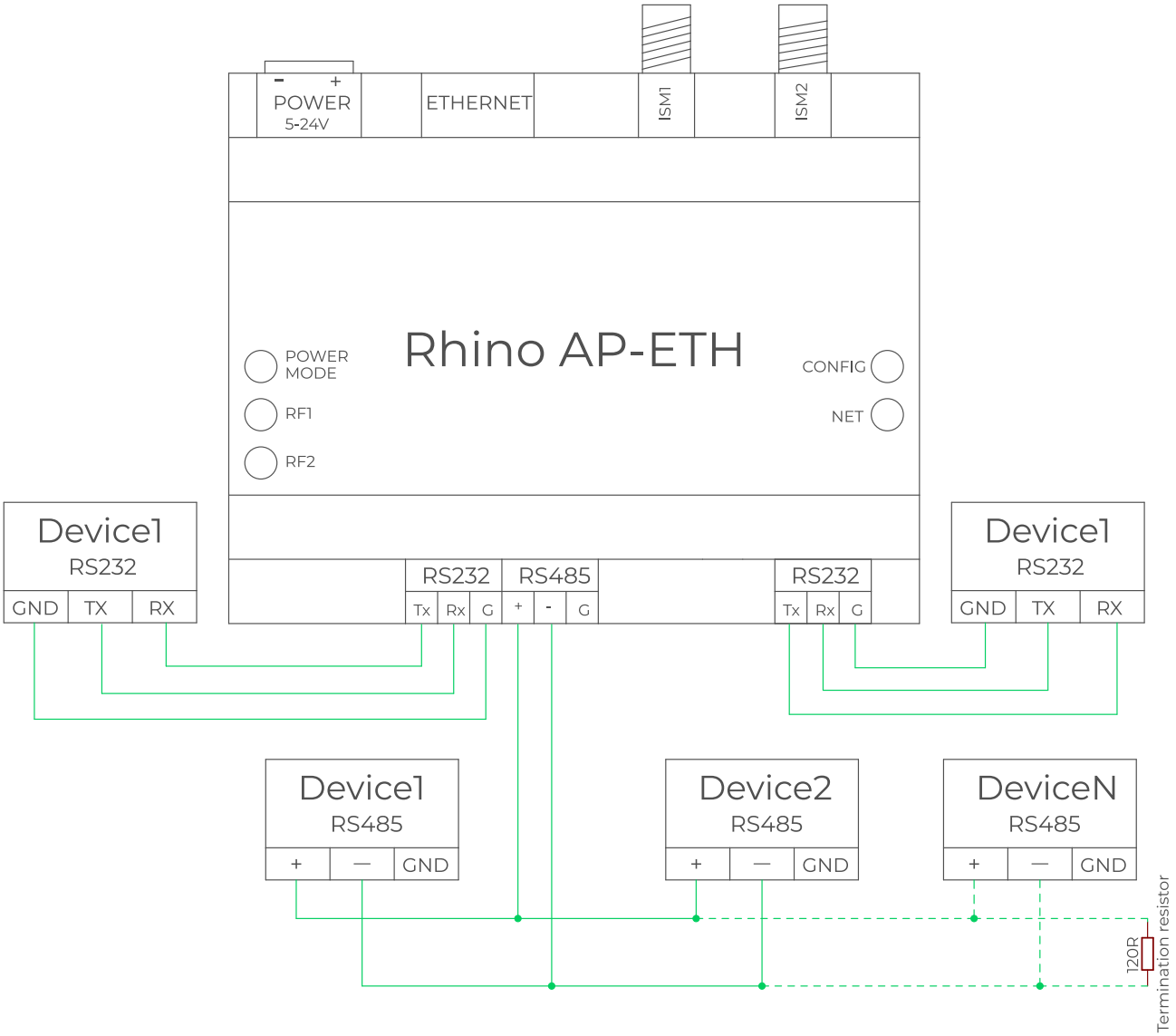
Rhino AP-ETH
Connection Diagram



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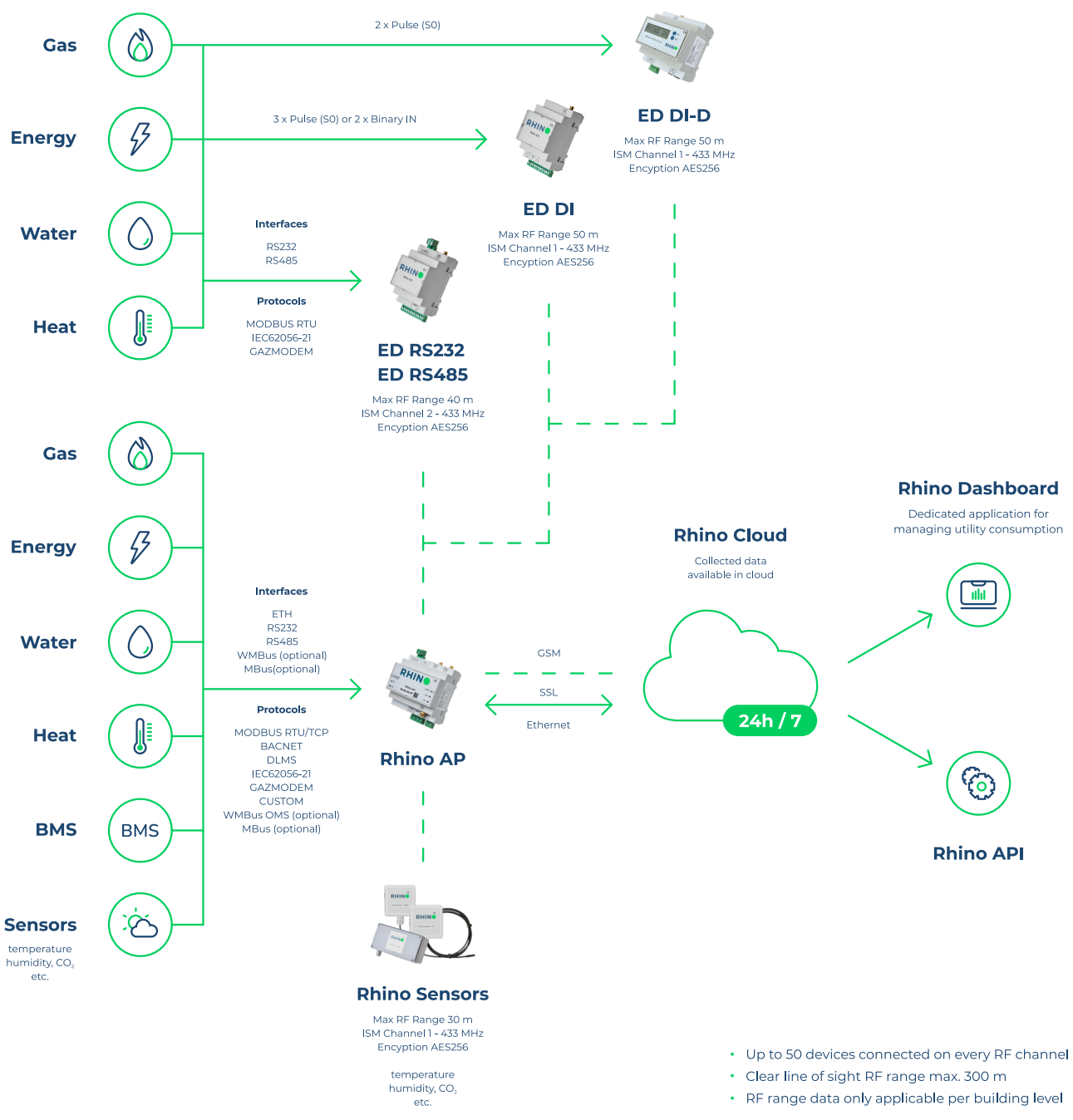
Rhino System
Topology



- Up to 50 devices connected on every RF channel
- Clear line of sight RF range max. 300 m
- RF range data only applicable per building level

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